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## **2004 Annual Report**

### **Material Separation Plan For the Diversion of Mercury**

### **SEMASS Resource Recovery Facility Rochester, Massachusetts**

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**March 2005**

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# **Material Separation Plan – 2004 Annual Report**

## **I. INTRODUCTION**

The SEMASS Partnership is pleased to submit its fourth Material Separation Plan (MSP) Report for the SEMASS Resource Recovery Facility (SEMASS RRF) covering the 2004 calendar year. The SEMASS Partnership (SEMASS) owns and operates the SEMASS RRF in Rochester, Massachusetts. American Ref-Fuel Company of SEMASS L.P. (Ref-Fuel) is the managing general partner of SEMASS. SEMASS provides solid waste processing and disposal services for more than sixty contracted communities located primarily in southeastern Massachusetts, Cape Cod, and the Boston vicinity. The SEMASS RRF receives and processes approximately 1,000,000 tons of solid waste annually. Electricity created from the processing of solid waste at the SEMASS RRF is sufficient to power approximately 75,000 households. Between 45,000 and 50,000 tons of recyclable ferrous and non-ferrous metals are typically reclaimed each year from waste processing at the SEMASS RRF.

The MSP activities for the 2004 calendar year were implemented in accordance with Material Separation Plan 2 (MSP2) for the first six months of the year and Material Separation Plan 3 (MSP3) for the remaining part of the year. MSP2 and MSP3 were approved by the Department of Environmental Protection (DEP) on December 4, 2002 and January 24, 2005, respectively. These documents were developed to guide SEMASS' continuing effort to educate and assist the SEMASS customer base in meeting the goals of the program. These goals included: 1) the identification of products in the solid waste stream that contained significant quantities of mercury and which were frequently disposed; 2) the dissemination of instructional and outreach support to educate the public about the reasons to reduce mercury in the waste stream and how to recover mercury-containing products; 3) to aid the SEMASS customer base in implementing removal and recycling programs, while supporting or supplementing existing programs; and 4) management of MSP activities involved with the above stated goals in a cost effective manner.

The MSP offered flexibility in the range of programs available to meet the list of goals described above. During 2004, SEMASS sought to help each of its customers maintain and expand programs that had been begun over the previous few years. If requested, a SEMASS community that didn't have a Universal Waste Shed was provided one so that they could provide safe storage of mercury-containing materials. SEMASS also provided communities with

mercury spill kits and training to help control potential mercury releases from damaged mercury-bearing devices. SEMASS then continued to implement mercury removal activities in the form of thermometer exchange programs, reimbursement for the removal and recycling of mercury-containing products, and thermostat collection programs. A wide variety of public outreach and education activities were undertaken by SEMASS and the IWSA. During 2004, some additional mercury removal programs were begun including a boatyard/marina collection program for mercury containing products and a trial program of reclaiming mercury switches from various “white goods”.

## **II. PLAN ACTIVITIES**

### **1.0 IWSA EDUCATION AND OUTREACH**

The Integrated Waste Services Association (IWSA) coordinated the regional education / outreach program for five Massachusetts’ waste-to-energy facilities including facilities located in Saugus, North Andover, Millbury, Haverhill, and Rochester (SEMASS).

#### **Objectives**

In 2004, the Regional Outreach Plan supported individual facility programs by the continued promotion of the media campaign, “Keep Mercury from Rising”. This campaign included newspaper and radio advertisements. The campaign used targeted advertising that educated the readers and listeners about the concerns related to mercury. The advertisements also encouraged residents to contact their local health departments to receive more information about mercury and find out where in their communities they could dispose of mercury containing devices.

The objectives for 2004 were met and included the following:

- The Regional Outreach Program continued to raise awareness about mercury-containing products in the home and the proper handling and disposal of these products;
- The Program provided information and promote local recycling events;
- The Program continued to build an integrated communications program that leveraged opportunities for incremental, free media, and worked synergistically with the efforts of individual waste-to-energy facilities.

## **Approach**

A public survey was completed in early 2004 for measuring the effectiveness of the educational campaign “Keep Mercury From Rising.” The survey’s findings were analyzed, and used to evaluate and design IWSA’s Regional Outreach Program, as well as the marketing of print advertisements and radio live-read script to run as public service announcements. A print advertisement, developed in 2003 and used again in 2004, targeted contractors and urged them to collect and recycle thermostats containing mercury switches. The website, [www.keepmercuryfromrising.org](http://www.keepmercuryfromrising.org), was revised to make it more user-friendly, and it now includes more contact information and contractor material, as well as continuing to provide information and assistance with recycling of mercury-containing products to the general public. A video, produced in 2003 about the SEMASS RRF and the MSP program, was promoted even further in 2004 by placing it on the website. The video explains the various programs that are now in place to help prevent mercury containing products from entering the waste stream.

### **1.1 Advertising.**

Radio and print advertising was run during May 2004. IWSA and SEMASS continued to use the “Keep Mercury from Rising” print advertisements featuring both the thermostat (contractor audience) and the thermometer (general public audience). Radio advertising provided a cost-efficient mass communication tool that allowed a message to be delivered frequently. Print advertising was equally effective. In addition to advertising in the *Boston Globe*, individual facilities used the “Keep Mercury From Rising” advertisements to announce local activities.

A three-week radio campaign was implemented in May 2004. The campaign was timed to encourage mercury recycling activities and added-value opportunities (e.g., sponsorship of special broadcasts, contests, and free spots stations provide). Radio stations airing the advertisements included WBZ-AM, WODS-FM, WMJX-FM.

In 2004, concentrated efforts were continued by using the *Boston Globe* and radio stations to maximize exposure of the MSP’s mercury message to the general public. The *Boston Globe* was utilized because for its circulation reach. Overall, the *Boston Globe* advertisements are believed to have generated a high impact due to its larger page size and use of color print, while reaching a fairly large audience within the SEMASS communities on multiple occasions.

### **1.2 Web-based Tools.**

The website, [www.keepmercuryfromrising.org](http://www.keepmercuryfromrising.org), was updated and revised to make it more user friendly while also providing additional information. The site now contains additional links of interest. These additional links include a list of drop-off sites, how to handle mercury spills, a frequently asked questions (FAQs) page, the video on the SEMASS RRF and the MSP program, and a list of contractors.

### **1.3 Print Materials.**

IWSA continued to make available educational brochures and print information developed in previous years. The basic “Keep Mercury From Rising” message is consistent with media formats used.

### **1.4 Video.**

The five-minute “Keep Mercury from Rising” educational video was completed for each facility in 2003 and continued to be promoted in 2004. The video explains the need to recycle mercury-containing products and the efforts undertaken by Massachusetts and the waste-to-energy facilities to prevent mercury from entering the environment.

The video continues to be being used at the SEMASS RRF for educational purposes during tours and other meetings. Copies of the video have been made available to cable access television stations. Copies of the video also have been given to local public officials to be shown at meetings, schools, senior citizen centers, and other organizations that would benefit from viewing the video. As noted above, the video also may be viewed at the website.

### **1.5 Evaluation Tool.**

The effectiveness of the regional education campaign is in large part measured by an annual research survey. The polling is designed to measure positive changes in public attitudes and behaviors, as well as the receptiveness of the message. The survey questionnaire was completed in May 2004, and consisted of 500 completed interviews, providing a 95% confidence level. The results showed that most people had not heard of the “Keep Mercury From Rising” slogan, and therefore media buys were increased slightly to determine if additional exposure might increase awareness. However, there was a dramatic increase in reported action taken by respondents if a mercury thermometer broke in the home.

## 2.0 LOCAL EDUCATION AND OUTREACH

### 2.1 Community and School Outreach.

Local education and outreach has proven to be an important component of executing the MSP. By making the residents within SEMASS' contracted communities more aware of how to properly dispose of mercury containing products and elemental mercury, and of the various Activities offered by the MSP, the greater the likelihood of success.

A bullet summary list of the various local education and outreach activities completed by SEMASS during 2004 is provided below:

- SEMASS and Covanta Energy hosted a informational booth at the annual Massachusetts Municipal Association meeting in Boston in January to promote the MSP and its Activities
- At the request of the DEP, stakeholder meetings were held for those within SEMASS' contracted communities for the purpose of soliciting ideas for the new MSP3 program. Meetings were held at the SEMASS RRF on January 8<sup>th</sup>, in Waltham on January 22<sup>nd</sup>, and in Hyannis on January 27<sup>th</sup>.
- In response to a request made by the South Shore Recycling Cooperative, SEMASS helped fund a radio advertisement that occurred during the summer of 2004 to promote the proper disposal of mercury bearing devices as well as other items that should be recycled.
- In February, SEMASS made a presentation to a science class at Fairhaven High School on the health effects of mercury and its proper management. The presentation included the *Keep Mercury from Rising* video, distribution of brochures about mercury, and a mock mercury spill contest.
- In February, SEMASS made presentations to four Middle School classes at Wareham Middle School on the health effects of mercury and its proper management. The presentations included the *Keep Mercury from Rising* video, distribution of brochures about mercury, and mock mercury spill contests.
- Presentations were made to three classes at Saint Joseph's Middle School in Fairhaven in March 2004 on the health effects of mercury and its management. The clean up of a mock mercury spill was conducted.

- In April, a high school senior class in environmental science from Weymouth High School toured the SEMASS RRF and a presentation was made on the proper management of mercury and its health effects
- SEMASS made a presentation in April to approximately one hundred and twenty (120) 1<sup>st</sup> graders at Hammond Elementary School in Wareham on mercury products and how it should be managed.
- In March, SEMASS gave a tour to twelve students from Wareham High School as part of a mercury education project by their science teacher. The proper management of mercury and its health effects were discussed.
- In June, SEMASS provided a presentation to fourth and fifth graders at Truro Elementary School on the SEMASS RRF, recycling and the proper management of mercury containing products.
- In June, a presentation was made at a meeting of to Council of SEMASS Communities (COSC), on the progress being made with the MSP and encouraging their participation in the various MSP Activities being offered.
- In the later half of 2004, color postcards were developed summarizing the MSP program and the various Activities that are offered by SEMASS. The intent was to do a mass mailing to all of SEMASS' contracted communities. Although the postcards were printed, SEMASS decided to not mail them until MSP3 was approved. The postcards will be mailed out in early 2005.
- At the request of the Cape Cod Cooperative Extension (CCCE), SEMASS provided them in June with approximately 125 sets of Dunkin Donuts® coupons to help support their efforts to promote all of the various MSP Activities throughout Cape Cod
- In May, SEMASS sponsored the printing of advertisements that were used at an open house that was conducted at the Town of Milton's Transfer Station. The purpose of the open house was to educate community residents about various waste materials (including mercury) and their proper management/disposal.
- Over the summer, SEMASS partnered with the Town of Randolph and funded an informational brochure on the town's efforts to properly manage waste, including mercury products. The brochure was mailed to all of the town's 12,700 residents using multiple different languages.

- SEMASS provided a grant for an event held by the Coalition for Buzzards on July 17<sup>th</sup> at Fort Taber in New Bedford. The event helped make the public more aware of harmful pollutants (including mercury) that can contaminate water bodies.
- To further promote the MSP, SEMASS gave a presentation in August at one of the South Shore Recycling Cooperative's (SSRC) monthly meetings. The presentation outlined the various Activities that are offered in the MSP and available for their communities. The presentation's highlights were also presented in the SSRC's fall 2004 newsletter
- At the request of the SSRC, SEMASS funded radio ads to run on two local radio stations in November. The radio ads featured general recycling and the proper management of mercury containing products

As part of local education and outreach, SEMASS continues to support the Educational Leadership for Civic Responsibility (ELCR) organization. ELCR is a regional non-profit organization made up of educators and administrators in five school districts in partnership with higher education. ELCR's mission is to promote social action and civic responsibility through service-learning in K-16 educational institutions. Another part of ELCR's mission is to develop strong school, community and business partnerships to serve the social and environmental needs of communities. The group of schools that SEMASS has worked with includes elementary schools, middle schools and high schools in the Towns of Wareham, Marion, Mattapoisett, Rochester, Fairhaven and Carver, as well as the University of Massachusetts at Dartmouth's community nursing program.

A few of the ELCR activities completed in 2004 year are highlighted below.

- In April, an eight page insert was placed in the New Bedford *Standard Times* newspaper entitled *Pollution Solutions*. The insert highlighted teachers and students that participated in the mercury mini-grant program which was funded by SEMASS. Numerous articles written by students to address the issue of mercury and other forms of pollution in the waste stream was discussed in the insert. SEMASS funded the production costs of this insert which was distributed to the areas of Onset, Wareham, West Wareham, East Wareham, Buzzards Bay, Rochester, Marion, Mattapoisett, Fairhaven and Acushnet
- SEMASS provided funds to the ELCR organization to award grants for five different service-learning mercury projects at the five school districts



involved with community service learning. Teachers within these schools applied for these grants to implement a mercury project for their students. These grants were implemented as follows:

- a. Wareham High School Environmental Club: Students researched and wrote about mercury and selected writings were published in *Pollution Solutions*. Students also designed a banner that was hung in Town to advertise the Mercury Thermometer Exchange/Household Hazardous Waste Collection Day. Students volunteered on the exchange and collection day.
  - b. Wareham Grade 5 Health Classes: Approximately 300 students worked on the development of a brochure about mercury. The brochure went home to their families along with a digital thermometer. Students also participated in the direct mail flyer contest that educates residents about the need to properly dispose of products that contain mercury and advertises the HHP Day. The flyer was mailed to residents in Wareham and Carver.
  - c. Fairhaven High School Chemistry Class: Students participated in conducting a survey about mercury, writing for *Pollution Solutions* and participated in a local thermometer exchange.
  - d. Old Rochester Regional High School Environmental Class: Students designed a banner, participated in the direct mail flyer contest and volunteered on the exchange day. The winning flyers were mailed to residents in Marion, Rochester and Mattapoisett.
  - e. Old Rochester Grade 5: Students learned about mercury and did water testing projects.
- A “Young Publishers Project” was initiated by the ELCR program at a Wareham school from funding provided by SEMASS. For this activity, 1<sup>st</sup> grade students from the Hammond School in Wareham wrote about and drew posters on what they had learned on the proper management of mercury. Their work was then used to publish several copies of a professionally bound book. The book was donated to the school’s library.
  - SEMASS again funded the development and mailing of informational leaflets during September and October. The leaflets were developed by classroom involved in community service learning. Approximately 40,000 leaflets were mailed out to five towns in Southeastern, MA. The overwhelming turnout at the first HHP day/thermometer exchange in

2001 has resulted in the HHP Day now established to be the first Saturday in May at 3 locations.

- University of Massachusetts Dartmouth Nursing students conducted a survey, participated in writing for *Pollution Solutions* and held a thermometer exchange in the Town of Bourne and participated in the annual HHP Day.

## **2.2 Business Outreach.**

In 2004, SEMASS' outreach to businesses was essentially through the Thermostat Program (see Section 3.4) and the Boatyard Marina Program (see Section 3.7). For the Thermostat Program, SEMASS engaged the efforts of Complete Recycling Solutions (CRS) to target retail hardware stores. If a retailer showed interest, educational information was provided and a thermostat collection program was implemented. With respect to the Boatyard Marina Program, outreach efforts were made to various private marinas to educate them about mercury found in bilge pumps and what SEMASS was offering as part of the MSP program to collect them. SEMASS plans to continue reaching out to these types of businesses in 2005.

## **2.3 Mercury Handling and Awareness Training**

HAZMATEAM, Inc. of Hudson, NH provided multiple training sessions for SEMASS at various locations during 2004 on mercury awareness. Each training session was approximately 2 ½ hours in duration and covered various aspects of mercury including its physical characteristics, health effects, handling and storage, spill management, and its effect on the environmental. The training was essentially available to anyone from the various SEMASS contracted communities such as school representatives, DPW personnel, and emergency response personnel. Mailers were sent out before each of the mercury awareness training session to promote interest and attendance.

HAZMATEAM, Inc. completed 5 training sessions for SEMASS on 4 different days. Three of these training sessions were held at the SEMASS RRF on January 8<sup>th</sup> and January 22<sup>nd</sup>. The other two sessions were held in Waltham on January 22<sup>nd</sup> and in Dartmouth on February 12<sup>th</sup>. The training on February 12<sup>th</sup> was for teachers at the New England School of Law.

### **3.0 MERCURY REDUCTION / RECYCLING PROGRAMS**

#### **3.1 Medical and Dental Facilities.**

For 2004, this activity focused primarily on the collection of mercury containing sphygmomanometers (blood pressure cuffs/monitors) with non-mercury units. In addition to medical facilities, the approved MSP3 plan also spoke about targeting dental facilities to reclaim elemental mercury in the form of amalgams; however, only preliminary planning efforts for this activity occurred in 2004.

To support SEMASS' efforts in collecting mercury containing blood pressure monitors, Pozitive Environmental Solutions, Inc. (PESI) of Stoughton, MA was engaged. In addition to SEMASS' own efforts, PESI contacted various medical facilities to determine if they had mercury containing blood pressure monitors and whether SEMASS could replace them with non-mercury units.

During May and June, PESI began a telephone campaign to contact various medical facilities in the SEMASS service area in an effort to collect mercury containing blood pressure cuffs/monitors. If these facilities had mercury containing devices, an offer was made to reclaim them at SEMASS' expense. PESI was able to speak to seventeen medical facilities (mostly hospitals); however, only one hospital (Goddard Hospital in Stoughton) indicated that they had 65 mercury-containing blood pressure cuffs available for reclamation. The 65 units from Goddard Hospital were collected and SEMASS also provided funding towards their replacement. From this effort, PESI was also able to determine that Northeast Specialty Hospital of Braintree had 55 lbs of elemental mercury that SEMASS funded to reclaim.

**3.2 Thermometer Exchange Programs.** In an effort to target the most publicly recognized mercury-containing device (thermometers), SEMASS continued to offer the communities opportunities for exchanging glass fever thermometers containing mercury with digital thermometers that were purchased by SEMASS. To inform the SEMASS customers of this opportunity, various communication methods were used throughout the year including presentations at Council of SEMASS Communities (COSC) meetings, training sessions, informational mailings, telephone calls and personal meetings with community representatives/officials. SEMASS used these communication tools to advise and provide its customers with the necessary information to assist them in implementing a thermometer exchange program.

The communities employed various types of mercury thermometer collection and exchange events throughout the year. Some of these events occurred on a single day, while others continue to occur on an ongoing basis. On occasion,

several communities worked together to sponsor a thermometer cooperative exchange event. Household hazardous waste collection days were also used by the communities as an opportunity for collecting mercury thermometers and exchanging them for digital thermometers.

With respect to cooperative exchanges, many of the communities decided to pool their resources and sponsor multi-town thermometer exchange events. Many of the smaller communities chose this approach. By hosting cooperative events, the communities were better able to staff the event as well as to coordinate advertising and local public service announcements.

Several of the communities also held thermometer exchange events on an ongoing basis at specified location(s) within a community. These locations varied, but were typically at the Boards of Health offices, Town Halls, transfer stations and/or Department of Public Works yards. Communities that provided this type of thermometer exchange opportunity gave the local residents more opportunity to participate.

To maximize their financial resources, many of the communities combined their thermometer exchange activities with Household Hazardous Waste Collection Days. The combination of these two types of events gave the communities the opportunity to serve a larger segment of their residents in a more cost-effective manner.

A bullet list of some of the various thermometer exchange events is detailed below.

- On February 28<sup>th</sup>, SEMASS worked with Fairhaven High School and hosted a thermometer exchange. The event resulted in the collection of 253 thermometers, 8 thermostats, 4 lbs. of elemental mercury and 15 lab thermometers. To advertise this event, SEMASS funded the production of 5000 informational fliers that were placed in the February 23<sup>rd</sup> issue of the Standard Times newspaper.
- In March, at the request of the Town of Braintree's recycling department, SEMASS exchanged 15 school lab thermometers with non-mercury containing thermometers.
- On April 13<sup>th</sup>, the UMASS Nursing Students hosted a fever thermometer exchange at the Bourne Council on Aging in Bourne, MA. They retrieved 23 thermometers.

- In May, SEMASS provided guidance to the Braintree Recycling Committee in the development of public service announcements to promote their ongoing and single day mercury thermometer exchange events. SEMASS helped fund the town's thermometer exchange event which was held during the town's Household Hazardous Waste Day on May 22<sup>nd</sup>. SEMASS also funded an advertisement that was inserted into the monthly electrical bills of Braintree's residents for the purpose of promoting the town's ongoing mercury thermometer exchange that has been established at the Health Department in Town Hall. Supplies, consisting of digital thermometers and collection buckets, were also provided.
- Saint Joseph's Middle School in Fairhaven held a second thermometer exchange at one of the town's fire stations on May 8th. This collection was a joint venture between Polaroid, CVS Pharmacy, Town of Fairhaven, St. Joseph's Middle School and SEMASS. Approximately 200 thermometers and 10 thermostats were collected.
- On July 2<sup>nd</sup>, SEMASS retrieved 288 thermometers, 1 blood pressure cuff, 16 thermostats and 2 pounds of elemental mercury from the Town of Sharon's Department of Public Works. The collection of these mercury bearing devices occurred as a result of an article placed in the Sharon Advocate, as well as a newspaper ad promoting the thermometer exchange and the exchange of thermostats for Dunkin Donuts® coupons. SEMASS provided the Town with the necessary supplies for this collection.
- SEMASS continues to support the ongoing thermometer exchange at the Bourne Landfill by providing the necessary supplies. On July 15th, SEMASS provided an additional 500 digital thermometers to the Town of Bourne
- On August 3<sup>rd</sup>, SEMASS provided 500 digital thermometers, posters, brochures, and mercury spill kits to the Town of Brookline for its ongoing exchange at Town Hall.
- On August 6th, SEMASS provided 100 digital thermometers to the Town of Weymouth for the ongoing exchange held at the town's Department of Public Works office.
- In November, SEMASS placed an ad in the local newspaper for the Town of Carver to promote the town's ongoing thermometer exchange

SEMASS supported any communities that wanted to sponsor a thermometer exchange. SEMASS provided assistance, guidance and the necessary equipment for its success. In the process of working with the communities to develop a thermometer exchange event, SEMASS recognized that flexibility was necessary to meet a specific community's needs.

### **3.3 Community Reimbursement**

SEMASS allocated funds to reimburse communities for the cost of contracting with a vendor to properly dispose or recycle mercury containing devices that they collected through various initiatives such as thermometer exchanges and household hazardous product days (HHP days). In addition to reimbursing the cost to reclaim these devices, SEMASS also supported the community household hazardous product days, e.g., advertisements, brochures, in an effort to promote their collection. The opportunity to receive monies for the cost of collecting and recycling mercury containing devices was offered to all the communities who to take advantage of it.

To ensure that communities were fully aware of this Activity and how to best take advantage of it, an outreach campaign was made to contact the responsible officials in communities using certified mailings and follow-up telephone calls. Two large scale mailing campaigns were made throughout the year along with additional outreach efforts to various individual communities to encourage them take advantage of this opportunity. In these certified mailings, each community received a cover letter explaining the process and a reimbursement form to be completed prior to receipt of reimbursement for their mercury disposal/recycling costs. In addition to the communities receiving information on this activity, the same informational package was sent to the Municipal Recycling Incentive Program (MRIP) Coordinators, the Cape Cod Commission, the UMASS Cape Cod Extension, and the South Shore Recycling Cooperative.

Below are some highlights of SEMASS efforts to support community HHP days.

- SEMASS sponsored the CMW Regional Refuse Disposal District's direct mailing in March and April to promote their 3rd Annual HHP Day that occurred on May 1<sup>st</sup>. The cost for this mailing was approximately \$5,500.00. Three collection sites were established (two in Wareham and one in Marion). SEMASS also helped man at one of the locations during this event.
- In March, SEMASS worked with the Cape Cod Cooperative Extension and funded a significant portion of the cost to print and mail brochures to

promote six HHP days that were held throughout the year at the Barnstable Transfer Station. The brochures encouraged residents to bring in their mercury containing devices, e.g., thermostats, thermometers, in exchange for a digital thermometer from SEMASS. The cost to fund this program was approximately \$22,000.

- SEMASS helped fund a direct mailer/brochure that was sent by the South Shore Recycling Cooperative to residents in the communities they represent to promote 13 separately scheduled HHP days. The mailer encouraged residents to bring in their mercury containing devices in exchange for a digital thermometer or, alternatively, for Dunkin Donuts coupons supplied by SEMASS
- SEMASS provided the Town of Bellingham with information on MSP, including informational brochures, posters, and spill kits. Bellingham used this information for their HHP day on May 15<sup>th</sup>. During this event they also held a thermometer exchange.
- SEMASS helped fund the HHP day for the Town of Braintree that was held in May 2004. A grant of \$5,000 was provided to the town towards the placement of a newspaper ad and the reclamation of collected mercury products.

#### **3.4 Commercial and Residential Thermostat Program.**

This program concentrated on the collection and reclamation of residential thermostats through the use of existing programs established in MSP2 and their expansion as outlined in MSP3.

The residential program concentrated on the continued use of the *Dunkin' Donuts* campaign from MSP2. Collection sites were established at Town Halls, Boards of Health, and Building Departments of numerous communities for the collection of residential thermostats in exchange for a \$2 coupon redeemable at *Dunkin' Donuts*. Some communities, however, have shown resistant in getting involved in this program. In addition, SEMASS funded advertisements and brochures for several Household Hazardous Product Days (HHP days) to promote the collection of mercury containing thermostats in exchange for *Dunkin' Donuts* coupons. Some details of these efforts are outlined below:

- After inquiry by SEMASS, the Town of Sharon agreed to implement a *Dunkin' Donuts* thermostat exchange program in 2004. SEMASS provided the town with buckets, mercury spill kits, flyers, posters, digital thermometers, *Dunkin' Donuts* coupons and other supplies to support the

program. SEMASS also funded advertisements that were placed in the March issue of the Sharon Advocate. An article about the thermostat exchange program also appeared in the Sharon Advocate. As a result of these efforts, on July 2nd, SEMASS was able to retrieve 288 thermometers, 1 blood pressure cuff, 16 thermostats and 2 pounds of elemental mercury from the town.

- To support the Town of Mashpee's thermostat exchange program, SEMASS provided the town with *Dunkin' Donut* coupons, flyers, collection buckets, mercury spill kit, and other supplies. The Town hosts an on-going exchange at their Department of Public Works office. SEMASS offered the town the placement of place newspaper ads or the development of a Public Service Announcement (PSA), to promote the program.
- The Town of Bourne continues to implement the Dunkin' Donuts thermostat exchange campaign; however, it has had moderate success. SEMASS offered the town the placement of place newspaper ads or the development of a Public Service Announcement (PSA), to promote the program.

To promote the collection of thermostats from commercial and retail business, SEMASS met with Complete Recycling Solutions (CRS) in an effort to gain their assistance in expanding this program. SEMASS' interest was targeting hardware stores. CRS agreed to support our efforts and began a telephone campaign of approximately 30 businesses, primarily hardware stores in the SEMASS service area. As a result of these efforts, 12 hardware stores agreed to have thermostat collection buckets placed in their establishments. These hardware stores are located in Plymouth, Holbrook, Harwich, Falmouth, Sandwich, Yarmouth, Bellingham, Hanson, Chatham, Acushnet and Hyannis.

SEMASS supplied hardware retailers that agreed to participate in the thermostat collection program with prepaid collection buckets from CRS, laminated informational sheets of how to manage mercury products, mercury spill kits and supplies, posters, and brochures. The CRS prepaid collection buckets are each \$150 and it includes the cost to reclaim the collected items. After the bucket is full, the retailer has been instructed to call CRS who will then collect the full bucket and supplying them with an empty bucket.

In July, Advanced Air and Heat Company, Inc. (AAHC) of Freetown agreed to participate in the thermostat collection program. AAHC is a HVAC company that services homes and commercial business and, as such, is involved with the replacement of thermostats that contain mercury. They agreed to accept a pre-



paid bucket from CRS and collect thermostats. SEMASS provided them with all the necessary supplies in July and they have since had it replaced with a new one. After AAHC filled their first bucket, they called CRS who then came and collected it.

### **3.5 School Clean-Outs.**

SEMASS funded the collection and reclamation costs of mercury containing devices/products at two schools in 2004. These schools were the North Dighton/Rehoboth Regional High School and the Blue Hills Regional Technical School in Canton.

From discussions with Ms. Meg Thomas of the Northeast Waste Management Officials Association (NEWMOA), assistance was requested in cleaning out the North Dighton/Rehoboth Regional High School of mercury containing devices/products. Through coordination with Onyx/Superior, 94 lab thermometers, 2 blood pressure cuffs, 1 barometer and 2 pounds of elemental mercury were reclaimed from the school in June. To support the collection of these materials, SEMASS provided the school with non-mercury lab thermometers to replace the mercury bearing units.

For the Blue Hills Regional Technical School, SEMASS funded the collection and reclamation of their mercury containing products. Specifically, 16 pounds of elemental mercury, 3 thermostats and 1 blood pressure cuff were recovered in this school cleanout.

There were other schools located in the SEMASS service area that, on their own initiative, had elemental mercury and mercury containing devices removed from their premises. The schools that participated in this effort include the following: Weymouth Vocational High School; Weymouth Middle School, Plymouth Vocational High School; and Waltham High School. SEMASS plans to financially recognize their efforts in 2005 for removing mercury from within our communities.

To further promote this Activity in 2005, SEMASS sent letters to school administrators & science departments at forty-eight (48) located in the contracted communities soliciting the clean-outs of their schools of mercury containing products and devices. The letters were sent out in early December 2004. A listing of the schools was provided by NEWMOA. Some initial responses and interest appears to be promising.

### **3.6 Universal Waste Sheds.**

SEMASS continued to offer universal waste sheds (Sheds) to the contracted communities that don't already have one. All of the communities that have participated in this Activity have been reimbursed for their cost to purchase and have the Sheds installed. Communities with Sheds have been encouraged to place only mercury containing items in them. They were further informed that the mercury containing products that are collected must be labeled and removed by a third party recycling/collection vendor within one year from the date the first items was collected. A very high percentage of the contracted communities have and use a Shed.

Several efforts were made throughout the year to place Sheds with the remaining contracted communities that didn't already have one. Telephone and letter campaigns were initiated to target these remaining communities. SEMASS' efforts in November and December of 2004 resulted in four (4) additional communities, i.e., Blackstone, Sharon, Wellfleet, Weymouth, agreeing to accept the placement of a Shed.

In February of 2004, an additional Shed was placed at the Bourne High School. It is our understanding that its purpose is to primarily support the storage of fluorescent bulbs.

During September and October, SEMASS assisted the Town of Wrentham's new volunteer recycling coordinator in the re-opening of the town's Shed for the collection of mercury bearing devices. In addition, SEMASS designed an ad that was placed in their local paper to promote this service and a thermometer exchange.

### **3.7 Boatyards, Marinas, & Marine Facilities.**

As a result of requests by SEMASS stakeholders, a new program was initiated in mid-2004 to target boatyards, marinas and other marine repair and/or maintenance facilities for mercury containing products. The reasoning for this program is because most bilge pumps that are commonly used in boats have mercury-containing switches that are frequently replaced when normal routine maintenance is performed on the boats. Furthermore, because many of SEMASS' contracted communities are located on the coast, it was felt that a potentially new source of mercury could be captured for reclamation. Additional discussion of the program was provided in SEMASS' approved MSP3.

Through the support of the UMASS Cape Cod Cooperative Extension (CCCE), a mailing of approximately 130 marine related business and Harbor Masters on Cape Cod was completed to generate interest in this program. As a result of this mailing, 38 businesses expressed an interest in setting up a collection program.

SEMASS has supported the efforts of CCCE by providing posters, brochures, labels, mercury spill kits and pre-paid collection buckets for the 38 marine related businesses as well as funding the cost to have the mercury products properly reclaimed from them.

Efforts were made with the Health Agent in the Town of Fairhaven to initiate a bilge pump program with the seven marinas located within the town. The Health Agent has expressed an initial interest in establishing a program; however, progress has been slow. Additional efforts will be made again with Fairhaven in 2005.

SEMASS teamed with the Town of Duxbury during the summer of 2004 to place collection buckets at the marine facilities (Bayside Marine and Long Point Marine) located in the town. Both sites were provided with pre-paid collection buckets, posters, flyers, and mercury spill kits.

### **3.8 Appliance / White Good Recycling.**

As part of SEMASS' MSP3, a 12-month pilot program was implemented in late 2004 at the Yarmouth Transfer Station in an effort to remove, reclaim and recycle mercury containing switches from various "white goods". SEMASS engaged the services of Interstate Refrigerant Recovery, Inc. (IRRI) to locate and remove mercury switches from the appliances received by the Yarmouth Transfer Station. As a result of a recent COSC meeting of the SEMASS communities, other communities (Duxbury, Mashpee and Attleboro) also showed an interest in this program. Since that meeting, the Town of Duxbury began discussions with IRRI on this program opportunity. As of the end of 2004, however, a minimal number of mercury switches were reclaimed from the Yarmouth transfer station. A letter campaign to further promote this program at other locations will be initiated in 2005.

## **4.0 PROGRAM ADMINISTRATION.**

Administration of the MSP program is conducted as part of Task 4.0 and includes implementation of the following activities on an on-going basis:

- General communications with our community members or regional recycling organizations
- Communications with the DEP or other regulatory personnel
- Internal progress calls and/or meetings with the program team members and management

- Program subcontractor & contractor (i.e. PESI, HAZMATEAM, Onyx, CRS, etc.) management, discussion, coordination, meetings, contracting & payment/account processing
- Tracking program budget and expenditures
- Tracking reclaimed/recycled quantities of mercury, and mercury-containing devices
- Maintenance of program files & records

Program administration efforts conducted during 2004 also included preparation of the new, material separation plan (MSP3). Draft versions of the MSP3 Plan were submitted to the DEP on March 12, 2004, and September 17, 2004, with the final version submitted on November 8, 2004. In addition, SEMASS provided supplemental submittals on May 17, 2004, June 16, 2004, August 6, 2004, November 1, 2004, and January 7, 2005 in response to DEP questions and/or Public comments.

Further administrative efforts during 2004 also included various calls and meetings with IWSA, SEMASS, the other waste-to-energy companies, and DEP to develop revised formats for annual reporting.

### **III. MERCURY RECOVERY RESULTS**

A significant number of SEMASS' contracted communities participated in activities offered in the MSP. They have been working cooperatively with SEMASS and other regional recycling/outreach groups such as the South Shore Recycling Cooperative (SSRC), UMASS Cape Cod Cooperative Extension (CCCE) and others to recover mercury and mercury-bearing devices from the potential waste stream.

The type and quantity of mercury items (elemental or products) that were diverted from the waste stream in 2004 are provided in Table 1 by SEMASS community. The total amount of mercury reclaimed during the 2004 was estimated at an equivalent of 1,233 pounds of elemental mercury. To the extent it was possible, this quantity was determined using the revised reporting formats and criteria for estimating mercury amounts developed with DEP during Summer 2004. These criteria include the use of unit mercury weights by type of device that were developed by NEWMOA and incorporated into SEMASS' MSP3 Plan.

As detailed in Table 1, the most common mercury-containing items reclaimed during 2004 were: 1) straight lamp fluorescent bulbs (in various lengths from 1 to 6-feet), 2) 4-inch fever thermometers, 3) U-tube fluorescent lamps, and 4) residential/commercial thermostats. Products in lesser quantities included: other lamps (HID, compact), electrical and float switches, and blood pressure cuffs. The least common devices were barometers and mercury button-cell batteries.

As in prior years, elemental mercury sources dominated the total quantity of mercury reclaimed. With the assistance of PESI, Umass CCC Extension and our contract communities, some large sources of elemental mercury were reclaimed from SEMASS's potential wasteshed during 2004. These include some of the following sources:

- Cape Cod Health – Hyannis (Barnstable)
- Otis Air National Guard Base & Coast Guard Station – Cape Cod
- Weymouth Naval Air Station – Weymouth
- Mass Electric Company
- Regional Cape Cod Sources

#### **IV. PLAN EXPENDITURES**

SEMASS expenditures on the 2004 MSP program are detailed by task activity on Table 2. Expenditures for 2004 totaled \$376,000 broken down by major task as follows:

- |  |           |
|--|-----------|
| • Task 1.0 IWSA Education and Outreach:          | \$ 50,000 |
| • Task 2.0 Local Education and Outreach:         | \$ 68,000 |
| • Task 3.0 Mercury Reduction/Recycling Programs: | \$175,000 |
| • Task 4.0 Program Administration:               | \$ 83,000 |

As detailed in Table 2, the 2004 MSP year budget was determined by a 50%-50% combination of MSP2 and MSP3 plan budgets. MSP expenditures were comparable to budget for Tasks 1.0 and 2.0. Expenditures for Task 3.0 were slightly less than budgeted but comparable to MSP3 projections going forward.

## **SUPPORTING TABLES**